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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,273	12/04/2003	Harish Sripad Kulkarni	MS1-1706US	7122

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EXAMINER	
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2629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/728,273	KULKARNI ET AL.	
	Examiner	Art Unit	
	Shaheda A. Abdin	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3 Claims 6-11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In claim 6, lines 1 and 2, "a processor-readable medium comprising processor executable instruction" is being recited: however, the processor readable medium and executable instruction would reasonably be interpreted by one of ordinary skill in the art as software, per se. The claim does not positively recite the the instruction stored in the medium and executed by the machine. This subject matter is not limited to that which falls within a statutory category of invention because it is limited to a process, machine, manufacture, or a composition of matter. Software is a function non-descriptive material and is non-statutory subject matter.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 4- 6, 9-11,18 and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Li et al. (NP. IEEE computer Graphics and Applications, see IDS).

(1) Regarding claim 18:

Li teaches : a configuration module (in Fig. 1) configured to receive over a computer network (i.e system area network), video data (source image or MPEG or video stream) formatted for a large display (i.e. scalable large display wall), and to reformat (extraction at display cluster for correct image processing) the video data (source image video data) for one or more small displays (i.e. tiles or multiple monitors) that make up the large display (large scalable display wall) (page 31, column 1, paragraph 5, column 2, paragraph 1-4).

(2) Regarding claim 1:

Li teaches a method (in Fig. 1) comprising: receiving video data (i.e. image data at Display cluster) over a network (system area network) from a network Computer (i.e. console), the video data formatted (formatted at display cluster for image processsing) for display on a large display (i.e. display with multiple monitors) reformatting (i.e. isosurface-extracting PC cluster) the video data on an intermediate computer (i.e. display cluster with multiple PC's) for display on a number of small displays (I.e. multiple monitor or tiles display) that make up the large display (i.e. wall display); and distributing (rendering) reformatted (extracting) video data from the intermediate computer (i.e. display cluster) to at least some of the small displays (i.e. extracted PC cluster through multiple PC's to small display monitor or tiles) (page 29, column 2, lines 1-17, page 31, column 1 and column 2, lines 1-6, and lines 16-27, also see the illustration in Fig. 1)

(3) Regarding claim 2:

Li teaches wherein the distributing (i.e. rendering) comprises distributing the reformatted video data (extracting data) to clients (i.e. PC's), each client configured to drive a small display (i.e. large display wall) (Page 31, column 2, lines 115-27).

(4) Regarding claim 4:

Li teaches wherein the reformatting (extracting) comprises converting coordinates of drawing commands (i.e. application windows) from large display coordinates (i.e. CRT display or Wall display) into small display coordinates (virtual display i.e. small tiles monitors) (note that user can drag application windows from the

regular CRT display into virtual display i.e. substantially display on the display wall, i.e. replaced to the small monitor or tiles, page 34, column 2, 1st paragraph).

(5) Regarding claim 5:

Li teaches wherein the reformatting (extracting) comprises creating multiple drawing commands (i.e. computational alignment at input cluster) from a single drawing command (i.e. instruction from the consol) , wherein the single drawing command (instruction from the consol) would otherwise control a drawing that spans two or more of the small displays (i.e. multiple tiles monitors in the display wall) (note that) (page 30, column 2, paragraph 6, page, 31, column 1, paragraph 4 and 5).

(6) Regarding claim (6) :

Claim limitations and subject matter of claim 6 is discussed in claim 1. The claim defers from claim 1 in that the limitation "a processor-readable medium comprising processor executable instruction" additionally recited. Since Li's device is dealing with computer alignment and computer software system with processor, (page 29, column 2, paragraph 4, lines 7-10, page 33, column 2, paragraph 4 and 35, column 2, paragraph 1), it is cleared that processor-readable medium and processor executable medium would be provided in system of Li; otherwise the computer cannot perform it's functions.

(7) Regarding claim 9.

Note that in claim 6 discussed about a processor-readable medium and Li teaches wherein the reconfiguring (after extract) the video data comprises performing

an operation selected from the group comprising: altering (correcting) coordinates of a drawing (i.e. prespective matrix) command (i.e. execution information from projector) to correspond to a small display (i.e. small monitors in the large display wall) (note that corrected matrix based on video stream which is received each time from the console to display cluster's PC's, which is executed by projector and the drawing i.e. new pixel forms , page 30, column 2, paragrapg 2-3, page 34, column 2, paragraph 3); and creating multiple new drawing commands (i.e. new pixel information for the multiple tiles) from a single drawing command (i.e. information from the display cluster), each new drawing command corresponding to a small display (I.e. multiple monitors or tiles in the large display wall) (pagr 34, column 1, paragraph 2, column 2, paragraph 1-4).

(8) Regarding claim 10:

Note that a processor-readable medium as is discussed in Fig. 6, and Li teach wherein the sending (sending extracted data from the display cluster) comprises determining which small displays (i.e. small monitors) to send reconfigured video data to based on which portion of the large display (i.e. screen of the large display) each of the small displays Supports (note that each projector render only its own tile portion of the screen space which is based on the corrected or extracted video data, therefore, sending video data based on the portion of the large display) (page 34, column 2, paragraph 3).

(9) Regarding claim 11 :

Li teaches a computer (display cluster) and the processor-readable medium is discussed in claim 6, (page, 29, column 1, paragraph 3 and page 30, column 2).

(10) Regarding claim 20:

Li teaches large display (i.e. scalable large display wall, Fig. 1) video data (i.e. MPEG or video stream) received (received at display cluster) from a network computer (system area network), the large display video data formatted for display on the large display large display (page 31, column 1, paragraph 2-4).

(11) Regarding claim 21:

Li teaches small display (multiples tiels monitors) video data for sending to one or more of multiple clients (i.e. multiple PC's on the display cluster), each client configured to drive a small display (i.e. each client is configured to drive by projector on individual tiles) (page 34, column 2, paragraph 3-4), the small display video data reformatted from the large display video data (i.e. direct video stream from the consol) by the configuration module according to the configuration data (i.e.MPEG or video stream) (page 30, column 1, column 2, paragraph 2-7).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 3 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Ellis et al. (US Patent No; 4562450).

Regarding claims 3 and 19:

Note that Li further comprising: receiving configuration information (i.e. 2 MPEG or video stream) at the intermediate computer (i.e. the block for displaying cluster, Fig. 1) that includes location (i.e. space information, page 33, column 2, 4th paragraph, and page 34, column 1, 1st paragraph) and a screen resolution (i.e. native display resolution for scalable display wall, see page 33, column 1, 3rd paragraph, lines 1-13) for each of the small displays (page 32, column 1, lines page 34, column 2, lines 35-38, note that the intermediate computer receives the video stream from the consol through the system network and reformatted (i.e. extracted) the data for each projector of PC's and coordinat a and renders only its own tile of the screen and gives the screen resolution because the PC cluster is used to bring high resolution on the large display wall); determining a large display (large display wall) resolution based on the configuration information (page, 31, lines 16-27) ; and sending a request to the network computer from the intermediate computer to transfer the video data from the network computer to the intermediate computer at the large display resolution (note that the console working as a host and video data stream is flowing console to intermediate computer (i.e. display cluster) throw the system area network, sending and request performance must be applied between consol and display cluster to

transfer video data), but Li does not mention receiving configuration information at the intermediate computer that includes an identification.

However, Ellis in the same field of endeavor teaches an identification (address) and location (i.e. position active area) for each of the small displays (i.e. four separate display area) (column 4, lines 30-45, column 12, lines 30-48).

Therefore it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate the method of identification as taught by Ellis in to the display system of Li so that receiving the configuration information at the intermediate computer that could be including an identification and a location for each of the small displays. In this configuration the system would an enhanced high resolution in the large display device (Ellis, column 4, lines 65-67).

8. Claims 12 -13 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al inview of Cok et al. (US Patent No: 6999045 B2).

(1) Regarding claim 12:

Li teaches a system comprising: a number of small displays (multiple monitors or tiles pisplay) assembled as a large display (i.e. scalable large display, page, 33, column 1, paragraph 3) (note that the display is scalable by using tiles display which is executed by PC's in the display cluster, each projector renders only its own tiles portion, therefore, large display size and resolution are scalable by altering the number

of small displays) (also see page 33, column 2, paragraph 4); and a gateway computer (i.e. display cluster) configured to reformat (extract) large display video data (i.e. data from console) appropriate for display on the large display (i.e. large display wall) into small display (i.e. multiples monitor at the large display wall, page 34, column 1, 2nd paragraph) video data appropriate for display on the small displays depending on how the small displays are assembled, but Li does not teach a large display whose size and resolution are scalable by altering the number size of small displays.

However Cok in the same field of endeavor teaches a large display (i.e. tiles display, column 2, lines 40-50) whose size and resolution (see column 7, lines 1-3) are scalable by altering the number size of small displays (column 4, lines 20-30) .

Therefore it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate the method of size of large display as taught by Cok in to the display system of Li so that a large display whose size and resolution could be scalable by altering (changing) the number of small displays (column 4, lines 20-30) . In this configuration the system would have high resolution display device with high optical data transmission.

(2) Regarding claim 13:

Li teaches a number of clients (i.e. PC's at the display cluster) each configured to drive (i.e. execute) a distinct one of the small displays (i.e. multiples monitor) with small display video data received from the gateway computer (i.e. display cluster) (note that input cluster working as a getaway computer PC's receives the RPC calls with video data from the consol and execute them by each projector only its own portion of screen , page 34, column 2, paragraph 2).

(3) Regarding claim 16:

Li teaches wherein the small displays are selected from the group comprising: flat panel displays (i.e. LCD); computer monitors (i.e. console) ; and projectors (i.e. projectors display cluster's PC's) that illuminate separate portions of a display surface (i.e. each projector renders only its own tiles, page 30, column 1, paragraph 2, page 34, paragraph 4).

(4) Regarding claim 17:

Li teaches wherein the gateway computer (display cluster) and one of the clients (PC's) are one and the same device (note that PC's are formed at display cluster, therefore they are one and the same device, also see page 31, column 1, and paragraph 5).

9. Claims 7-8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Cok as applied to claim 12 and further in view of Sakai et al (US Patent No; 5680525).

(1) Regarding claim 14:

Note that Li teaches a configuration module configured as a part of the gateway computer to receive location information, and resolution information about each of the small displays and Ellis teaches the identification information (see the discussion in claim 2), but both Li and Cok do not teach calculate the resolution of the large display based on the information .

However, Sakai in the same field of endeavor teaches teach calculate the resolution of the large display based on the information (location= region see the expression 2) and identification (e.g. 2111b) (column 27, lines 65-67, column 28, lines 1--15).

Therefore it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate the method calculating the resolution as taught by Sakai into the display system of Li as modified by Cok so that the resolution of the large display could be calculated based on the information. In this configuration the system would have high resolution display with better quality.

(2) Regarding claims 7 and 8:

Note that a processor-readable medium is discussed in claim 6, and the rest of the limitation is discussed in claim 14, see the discussion in claim 14:

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Nishida (US Patent No: 6502107).

Regarding claim 15:

Note that Li teaches a network computer (i.e. system area network), the gateway computer (i.e. display cluster) being further display video data (i.e. video stream for large display wall) from the network computer at the of the large display (i.e. large scalable display wall), but Li does not teach the getaway computer being further configured o request the large display video data from the network computer at the resolution of the large display.

However, Nishida in the same field of endeavor teaches a gateway computer (i.e. 103) being further configured to request the large display video data (i.e. visual data) from the network computer (i.e. 102) at the resolution (desired resolution) of the large display (0087-0090).

Therefore it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate the method of requesting video data as taught by Nishida into the display system of Li so that the getaway computer could be configured to request the large display video data from the network computer at the resolution of the large display. In this configuration the system would have an appropriate resolution in the display devices (Nishida, [0014]).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's discloser Chiu et al (US PU. No: 20050030255) a peer to peer Gesture based modular display system.

Inquiry

12. Any inquiry concerning this communication should be directed to the examiner at (571) 270-1673 Monday- Friday 7:30 AM to 5:00 PM EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen, can be reached at (571) 272-7772.

Information regarding the status on an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (tool-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9799 (IN USA OR CANADA) or 571-272-1000.

Any response to this action should be mailed to:

Commissioner of patents and trademarks

Washington, D.C. 20231

Or fax to:

(703)872-9314 (for Technology Center 2600 only)

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01/06/2008

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